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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,135	07/19/2004	Hans-Joachim Hahnle	29827/40332	1567

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/502,135	Applicant(s) HAHNLE ET AL.	
	Examiner Terressa M. Boykin	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1-27-05</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection. However, it should be noted that applicants' claim 1 remains so broadly set forth that the claim continues to be interpreted by the Examiner as rendered obvious by the references while remaining within the scope of the specification. It should be noted that in order to prosecute the case resourcefully and expediently while giving the applicants the best possible search, it is imperative and practical for the applicants to clarify more precisely the particular "treatment" with an amino moiety in as much as such language may be interpreted broadly while remaining within the scope of the specification. Without such clarity of process treatment or structure, the art of record remains within the scope of the present claims and the Applicant's arguments although understood and appreciated are moot on those basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPub 2004/0046151 see abstract, page 2 paragraphs [0016]-[0029] Claims 3 in view of USP 5948829.

The reference discloses dispersions, which are used to increase the wet strength of paper. In the examples of the said patent, it is shown that the use of

acryloyloxyalkylsilane, in particular .gamma.-methacryloyloxypropyltrimethoxysilane, improves the wet mechanical properties (wet tensile strength) both in water and in solvent. Preferably, the initiator systems and the surfactants, when they are used in the form of salts, are used in the form of ammonium salts.

At the end of the polymerization, the polymer dispersions are subjected to a treatment to reduce the residual monomer content with redox pairs. Redox pairs which may be used are those reducing agents which do not release formaldehyde are, for example, ammonium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the method of treating the polymer with a primary or secondary amino groups since **USPub 2204.0046151** discloses the effectiveness thereof as well as the improvement of mechanical properties such as wet tensile strength as disclosed therein. Further, **USP 5948829** discloses a process for preparing an absorbent foam wherein water-swellaable, water-insoluble polymer which may be useful in the absorbent foam will generally be crosslinked. The amount of crosslinking should generally be above a minimum amount sufficient to make the polymer water-insoluble but also below some maximum amount so as to allow the polymer to be sufficiently water swellaable so that the water-swellaable, water-insoluble polymer absorbs a desired amount of liquid absorption. Polymers which are suitable for use in the present invention include a wide variety of anionic, cationic, and nonionic materials. Suitable polymers include polyacrylamides, polyvinyl alcohols, ethylene maleic

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anhydride copolymer, polyvinylethers, polyacrylic acids, polyvinylpyrrolidones, polyvinylmorpholines, polyamines, polyethyleneimines, polyacrylamides.

Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the method of treating the polymer with a primary or secondary amino groups since **USPub 2204.0046151** discloses the effectiveness thereof as well as the improvement of mechanical properties such as wet tensile strength as disclosed therein for further use to produce foamed articles therefrom .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4147845 see abstract, cols. 1-4 in view of USPub 2004/0046151 further in view of USP 5948829.

USP 4147845 relates to a process for reducing the monomer content in expandable thermoplastic beads which are produced by polymerizing an ethylenically unsaturated monomer or a mixture of such monomers in aqueous suspension in the presence of a blowing agent. The residual monomers in both

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the beads and the process water are reduced by treatment of the slurry of beads and water obtained after polymerization in a vessel at a temperature above 65.degree. C. in the presence of at least one water-soluble initiator. In order to avoid the expansion of the beads during the course of monomer reduction the vessel is kept completely filled with a liquid, preferably water, during the temperature treatment.

As examples of suitable water-soluble initiators for ethylenically unsaturated monomers may be mentioned well-known inorganic, free radical initiators, such as hydrogen peroxide and potassium or ammonium persulfates, or organic free radical initiators, such as hydroperoxides, cyclohexanoneperoxide or methyl isobutyl ketone peroxide. It is also within the scope of the invention to add a mixture of water-soluble initiators or a combination of a water-soluble and a monomer-soluble initiator, such as peroxides, e.g. lauroylperoxide, peroxidicarbonates, e.g. cetylperoxidicarbonate or azo compounds. The amount of water-soluble initiator can be within the range of 0.01-5% based on the weight of the charged monomer and preferably 0.1-2%.

Thus, each of the references disclose a method for treating residual polymers prepared from the same components as claimed by applicants. With regard to US **USP 4147845** any properties or characteristics inherent in the prior art, e.g. wet strengths etc., although unobserved or detected by the reference, would still anticipate the claimed invention. Note In re Swinehart, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things to distinguish over the prior art". Since

the disclosed amounts are expressed differently and thus may be distinct from those claimed, it is incumbent upon applicant(s) to establish that they are in fact different and whether such difference is unobvious.

The reference discloses a method for reducing residual monomers prepared from the same components as claimed by applicants except for the use of treating the polymer a primary or secondary amino groups.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the method of treating the polymer with a primary or secondary amino groups since **USPub 2204.0046151** discloses the effectiveness thereof as well as the improvement of mechanical properties such as wet tensile strength as disclosed therein. Further, **USP 5948829** discloses a process for preparing an absorbent foam wherein the water-swellaable, water-insoluble polymer which may be useful in the absorbent foam will generally be crosslinked. The amount of crosslinking should generally be above a minimum amount sufficient to make the polymer water-insoluble but also below some maximum amount so as to allow the polymer to be sufficiently water swellaable so that the water-swellaable, water-insoluble polymer absorbs a desired amount of liquid absorption. Polymers which are suitable for use in the present invention include a wide variety of anionic, cationic, and nonionic materials. Suitable polymers include polyacrylamides, polyvinyl alcohols, ethylene maleic anhydride copolymer, polyvinylethers, polyacrylic acids, polyvinylpyrrolidones, polyvinylmorpholines, polyamines, polyethyleneimines, polyacrylamides.

Consequently, it would have been obvious to one having ordinary skill in the art at the

time the invention was made to employ the method of treating the polymer with a primary or secondary amino groups since **USPub 2204.0046151** discloses the effectiveness thereof as well as the improvement of mechanical properties such as wet tensile strength as disclosed therein for further use to produce foamed articles therefrom .

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over 2004/0046151 see abstract, claims further in view of USP 5948829.

The reference discloses a method for reducing residual monomers prepared from the same components as claimed by applicants except for the specific use of treated the polymer in a diaper.

However, it is commonly known that a basic problem with commercially available water-absorbent resin particles has been the presence of residual monomers, which represent process inefficiency. Accordingly, it would be desirable to have a process for preparing a water-absorbent polymer product with reduced residual monomer. **USPub 2204.0046151** discloses dispersions, which are used to increase the wet strength of paper. In the examples of the said patent, it is shown that the use of acryloyloxyalkylsilane, in particular .gamma.-methacryloyloxypropyltrimethoxysilane, improves the wet mechanical properties (wet tensile strength) both in water and in solvent. Preferably, the initiator systems and the surfactants, when they are used in the form of salts, are used in the form of ammonium salts. As noted above, USP 5948829 discloses a process for preparing an absorbent foam wherein the water-swellaable, water-insoluble polymer which may be useful in the absorbent foam will generally be

crosslinked. The amount of crosslinking should generally be above a minimum amount sufficient to make the polymer water-insoluble but also below some maximum amount so as to allow the polymer to be sufficiently water swellable so that the water-swellable, water-insoluble polymer absorbs a desired amount of liquid absorption. Polymers which are suitable for use in the present invention include a wide variety of anionic, cationic, and nonionic materials. Suitable polymers include polyacrylamides, polyvinyl alcohols, ethylene maleic anhydride copolymer, polyvinylethers, polyacrylic acids, polyvinylpyrrolidones, polyvinylmorpholines, polyamines, polyethyleneimines, polyacrylamides.

Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the method of treating the polymer with a primary or secondary amino groups for use in producing diapers since **USPub 2204.0046151** discloses the effectiveness thereof as well as the improvement of mechanical properties such as wet tensile strength as disclosed therein for further use to produce foamed articles therefrom .

Consequently, the claimed invention cannot be deemed as unobvious and accordingly is unpatentable.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov <<http://www.uspto.gov>>), from the Office of Public Records and

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from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb


Examiner Terressa Boykin
Primary Examiner
Art Unit 1711